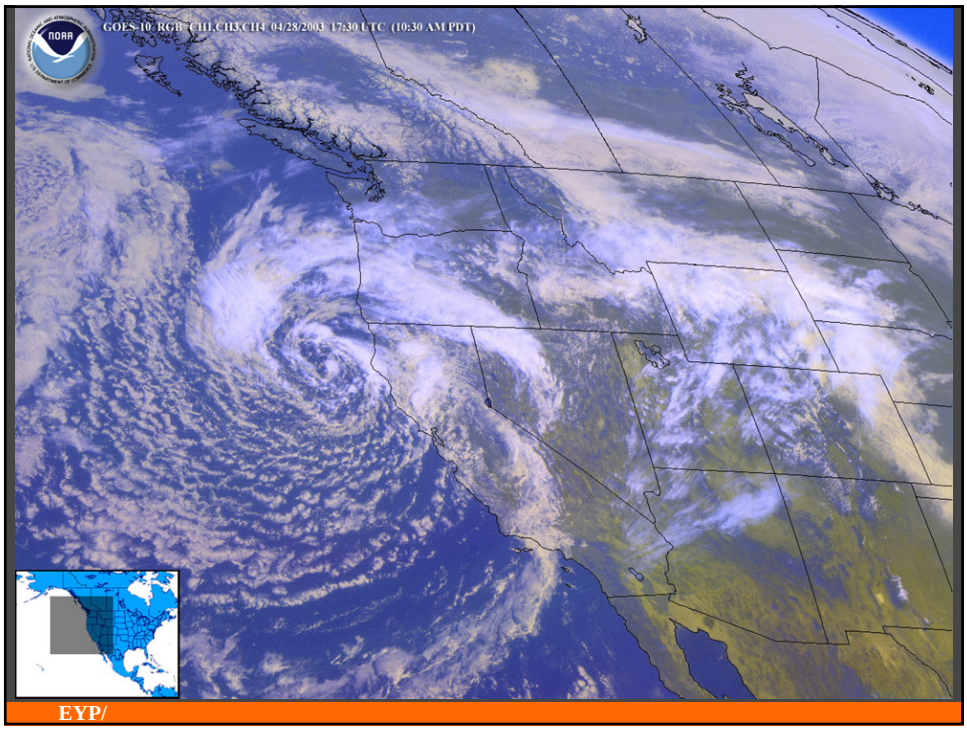
Energy 2004

August 8 – 11, 2004

Doug Gehley, AIA, LEED™

EINHORN/YAFFEE/PRESCOTT
Architecture & Engineering P.C.


NOAA Satellite Operations Facility
• location: Suitland Federal Center, Suitland MD
• size: 208,000 SF / 19324 SM
• green roof area: 146,000 SF / 13560 SM
• estimated cost: $55,000,000
• building type: High-tech office and satellite control center (24/7)
• completion date: September 2005
EYP/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NOAA-16 HRPT RGB=CH3,CH2,CH1 10/26/2003 20:55 UTC (12:55 PM PST)
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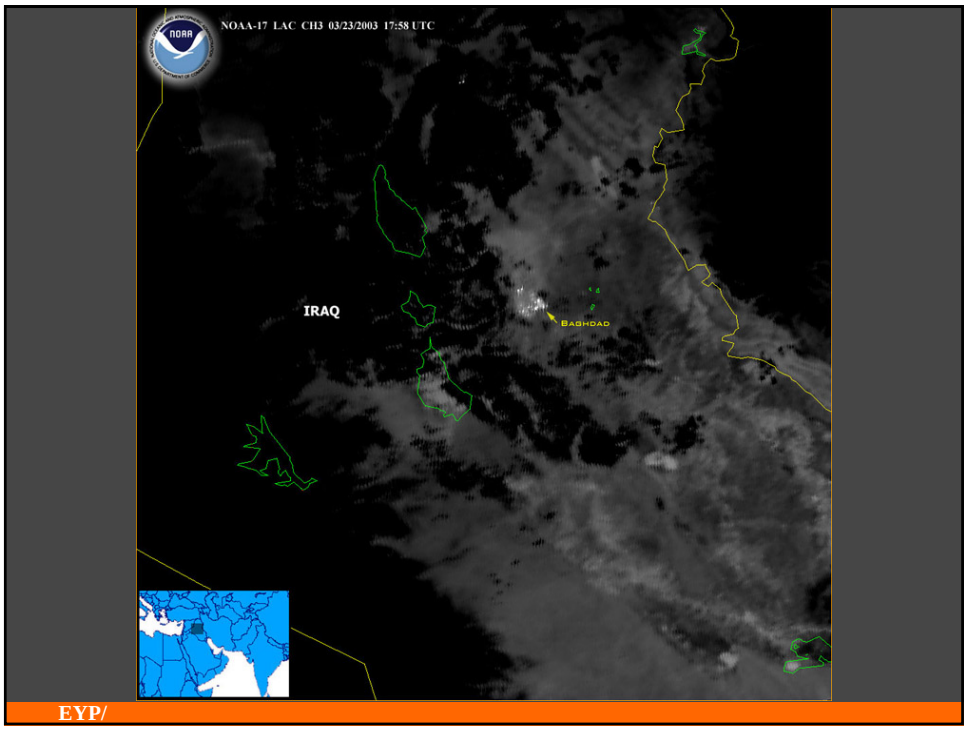
California
Los Angeles
Arizona
San Diego
Pacific Ocean
MEXICO
EYP/


NOAA-17 LAC CH3 03/23/2003 17:58 UTC
IRAQ
Baghdad
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NOAA/NESDIS - Mission

- Activities
  - Satellite Operations Control Center
  - Central Environmental Satellite Computer System
  - Mission Control Center
  - Joint National and Naval Ice Center
- $50 million of data processing systems controlling more than $4 billion in satellites

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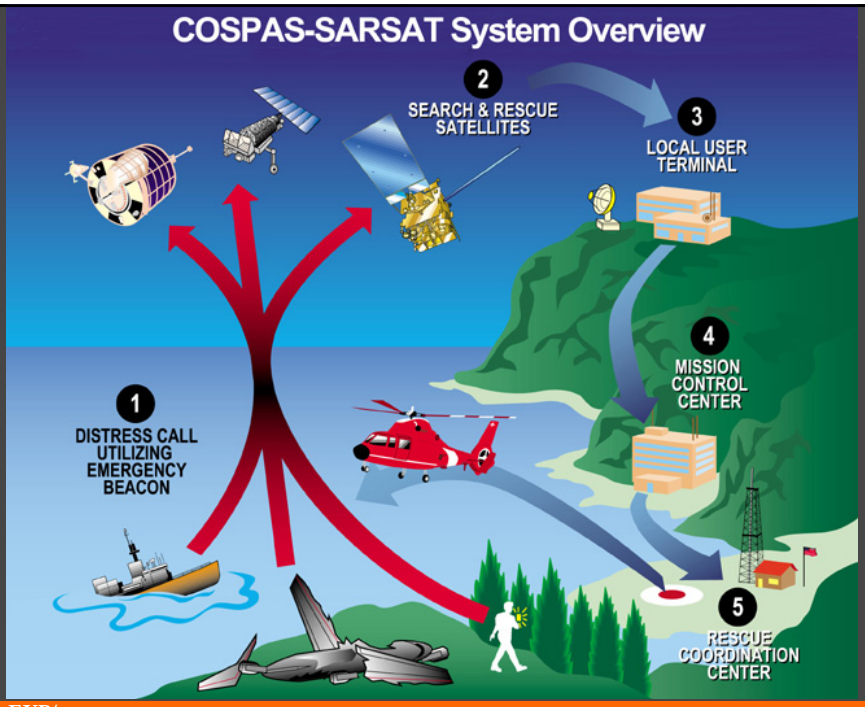

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THE BEGINNING

- In A/E selection criteria
- In A/E scope of work (called out, not just referred to from specifications)
- In CM + GC selection criteria, and their scope of work

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THE PROCESS

- Use LEED™ checklist
- Factor in design development meetings
- Part of each deliverable review
- Designated “champion” on A/E team

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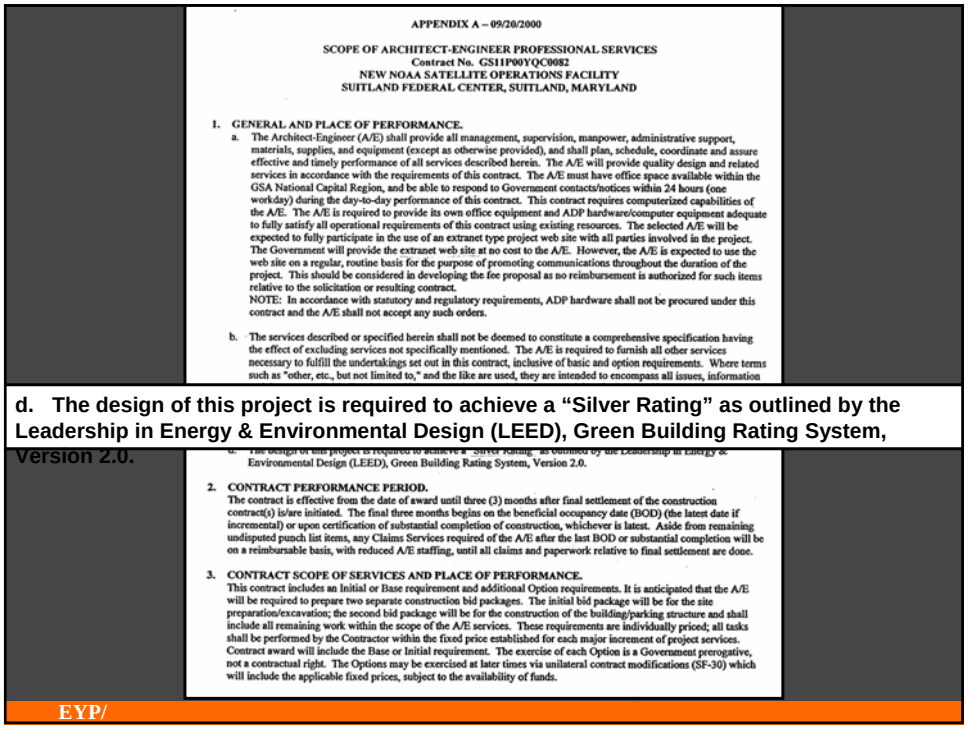

APPENDIX A – 09/20/2000

SCOPE OF ARCHITECT-ENGINEER PROFESSIONAL SERVICES
Contract No. GS11P00YQC0082
NEW NOAA SATELLITE OPERATIONS FACILITY
SUITLAND FEDERAL CENTER, SUITLAND, MARYLAND

1. GENERAL AND PLACE OF PERFORMANCE.
   a. The Architect-Engineer (A/E) shall provide all management, supervision, manpower, administrative support, materials, supplies, and equipment (except as otherwise provided), and shall plan, schedule, coordinate and assure effective and timely performance of all services described herein. The A/E will provide quality design and related services in accordance with the requirements of this contract. The A/E must have office space available within the GSA National Capital Region, and be able to respond to Government contacts/notices within 24 hours (one workday) during the day-to-day performance of this contract. This contract requires computerized capabilities of the A/E. The A/E is required to provide its own office equipment and ADP hardware/computer equipment adequate to fully satisfy all operational requirements of this contract using existing resources. The selected A/E will be expected to fully participate in the use of an extranet type project web site with all parties involved in the project. The Government will provide the extranet web site at no cost to the A/E. However, the A/E is expected to use the web site on a regular, routine basis for the purpose of promoting communications throughout the duration of the project. This should be considered in developing the fee proposal as no reimbursement is authorized for such items relative to the solicitation or resulting contract.
   NOTE: In accordance with statutory and regulatory requirements, ADP hardware shall not be procured under this contract and the A/E shall not accept any such orders.

   b. The services described or specified herein shall not be deemed to constitute a comprehensive specification having the effect of excluding services not specifically mentioned. The A/E is required to furnish all other services necessary to fulfill the undertakings set out in this contract, inclusive of basic and option requirements. Where terms such as "other, etc., but not limited to," and the like are used, they are intended to encompass all issues, information

d. The design of this project is required to achieve a "Silver Rating" as outlined by the Leadership in Energy & Environmental Design (LEED), Green Building Rating System, Version 2.0.

Environmental Design (LEED), Green Building Rating System, Version 2.0.

2. CONTRACT PERFORMANCE PERIOD.
The contract is effective from the date of award until three (3) months after final settlement of the construction contract(s) is/are initiated. The final three months begins on the beneficial occupancy date (BOD) (the latest date if incremental) or upon certification of substantial completion of construction, whichever is latest. Aside from remaining undisputed punch list items, any Claims Services required of the A/E after the last BOD or substantial completion will be on a reimbursable basis, with reduced A/E staffing, until all claims and paperwork relative to final settlement are done.

3. CONTRACT SCOPE OF SERVICES AND PLACE OF PERFORMANCE.
This contract includes an Initial or Base requirement and additional Option requirements. It is anticipated that the A/E will be required to prepare two separate construction bid packages. The initial bid package will be for the site preparation/excavation; the second bid package will be for the construction of the building/parking structure and shall include all remaining work within the scope of the A/E services. These requirements are individually priced; all tasks shall be performed by the Contractor within the fixed price established for each major increment of project services. Contract award will include the Base or Initial requirement. The exercise of each Option is a Government prerogative, not a contractual right. The Options may be exercised at later times via unilateral contract modifications (SF-30) which will include the applicable fixed prices, subject to the availability of funds.

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TRACKING THE EFFORT

Design Features in each LEED™ category

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Air Quality

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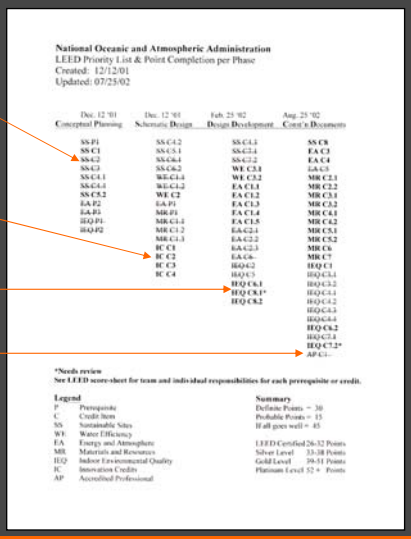
LEED PROGRESS CHART

Conceptual Planning

Schematic Design

Design Development

Construction Documents



National Oceanic and Atmospheric Administration
LEED Priority List & Point Completion per Phase
Created: 12/12/01
Updated: 07/25/02

Dec. 12 '01 Conceptual Planning	Dec. 12 '01 Schematic Design	Feb. 25 '02 Design Development	Aug. 25 '02 Const'n Documents
SS P1	SS C4.2	SS C4.1	SS C8
SS C1	SS C5.1	SS C5.4	EA C3
SS C2	SS C6.1	SS C5.2	EA C4
SS C3	SS C6.2	WE C3.1	EA C5
SS C4.1	WE C4.1	WE C3.2	MR C2.1
SS C4.3	WE C4.2	EA C1.1	MR C2.2
SS C5.2	WE C5	EA C1.2	MR C3.1
EA P2	EA P1	EA C1.3	MR C3.2
EA P3	MR P1	EA C1.4	MR C4.1
IEQ P1	MR C1.1	EA C1.5	MR C4.2
IEQ P2	MR C1.2	EA C2.1	MR C5.1
	MR C1.3	EA C2.2	MR C5.2
	IC C1	EA C2.3	MR C6
	IC C2	EA C6	MR C7
	IC C3	IEQ C4.2	IEQ C1
	IC C4	IEQ C5	IEQ C3.1
		IEQ C6.1	IEQ C3.2
		IEQ C8.1*	IEQ C4.1
		IEQ C8.2	IEQ C4.2
			IEQ C4.3
			IEQ C4.4
			IEQ C6.2
			IEQ C7.1
			IEQ C7.2*
			AP C1

*Needs review
See LEED score-sheet for team and individual responsibilities for each prerequisite or credit.

Legend

P	Prerequisite
C	Credit Item
SS	Sustainable Sites
WE	Water Efficiency
EA	Energy and Atmosphere
MR	Materials and Resources
IEQ	Indoor Environmental Quality
IC	Innovation Credits
AP	Accredited Professional

Summary

Definite Points =	30
Probable Points =	15
If all goes well =	45
LEED Certified	26-32 Points
Silver Level	33-38 Points
Gold Level	39-51 Points
Platinum Level	52 + Points

Silver Level 33-38 Points
Gold Level 39-51 Points

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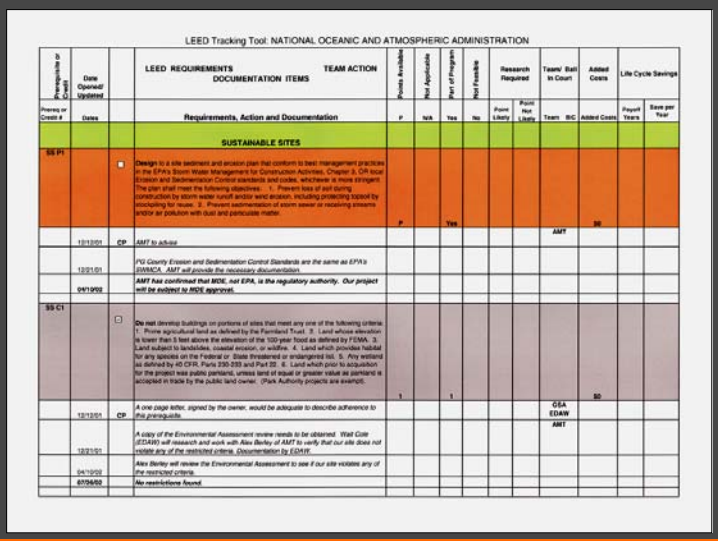
LEED TRACKING



LEED Tracking Tool: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Prereq or Credit #	Date Opened/ Updated		LEED REQUIREMENTS DOCUMENTATION ITEMS / TEAM ACTION	Points Available	Not Applicable	Part of Program	Not Possible	Research Required		Team/ Ball in Court	Added Costs	Life Cycle Savings	
	Dates		Requirements, Action and Documentation	P	N/A	Yes	No	Point Likely	Point Not Likely	Team B/C	Added Costs	Payoff Years	Save per Year
			SUSTAINABLE SITES										
SS P1		☐	Design to a site sediment and erosion plan that conform to best management practices in the EPA's Storm Water Management for Construction Activities, Chapter 3, OR local Erosion and Sedimentation Control standards and codes, whichever is more stringent. The plan shall meet the following objectives: . 1. Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse. 2. Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.	P		Yes				AMT	$0		
	12/12/01	CP	AMT to advise										
	12/21/01		PG County Erosion and Sedimentation Control Standards are the same as EPA's SWMCA. AMT will provide the necessary documentation.										
	04/19/02		AMT has confirmed that MDE, not EPA, is the regulatory authority. Our project will be subject to MDE approval.										
SS C1		☐	Do not develop buildings on portions of sites that meet any one of the following criteria: 1. Prime agricultural land as defined by the Farmland Trust. 2. Land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA. 3. Land subject to landslides, coastal erosion, or wildfire. 4. Land which provides habitat for any species on the Federal or State threatened or endangered list. 5. Any wetland as defined by 40 CFR, Parts 230-233 and Part 22. 6. Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public land owner. (Park Authority projects are exempt).	1		1					$0		
	12/12/01	CP	A one page letter, signed by the owner, would be adequate to describe adherence to this prerequisite.							GSA EDAW			
	12/21/01		A copy of the Environmental Assessment review needs to be obtained. Walt Cole (EDAW) will research and work with Alex Berley of AMT to verify that our site does not violate any of the restricted criteria. Documentation by EDAW.							AMT			
	04/19/02		Alex Berley will review the Environmental Assessment to see if our site violates any of the restricted criteria.										
	07/26/02		No restrictions found.										

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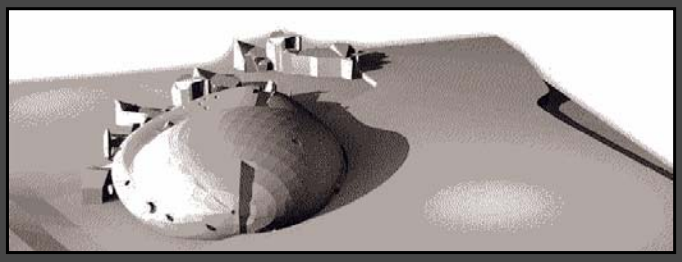
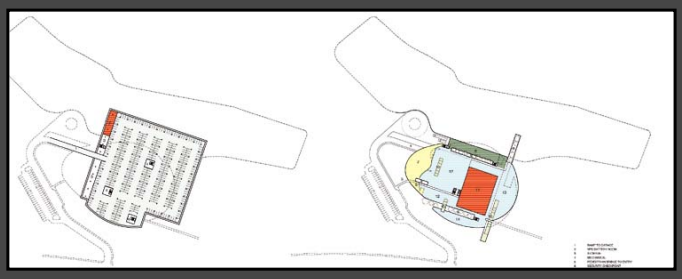
SCHEME A





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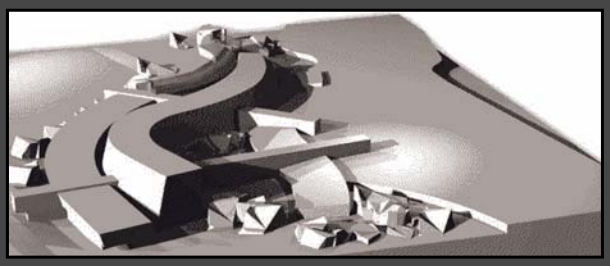
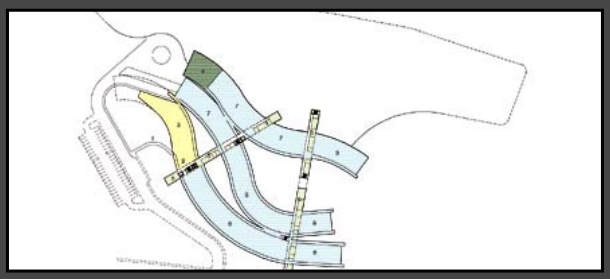
SCHEME B





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APPROVED SCHEME

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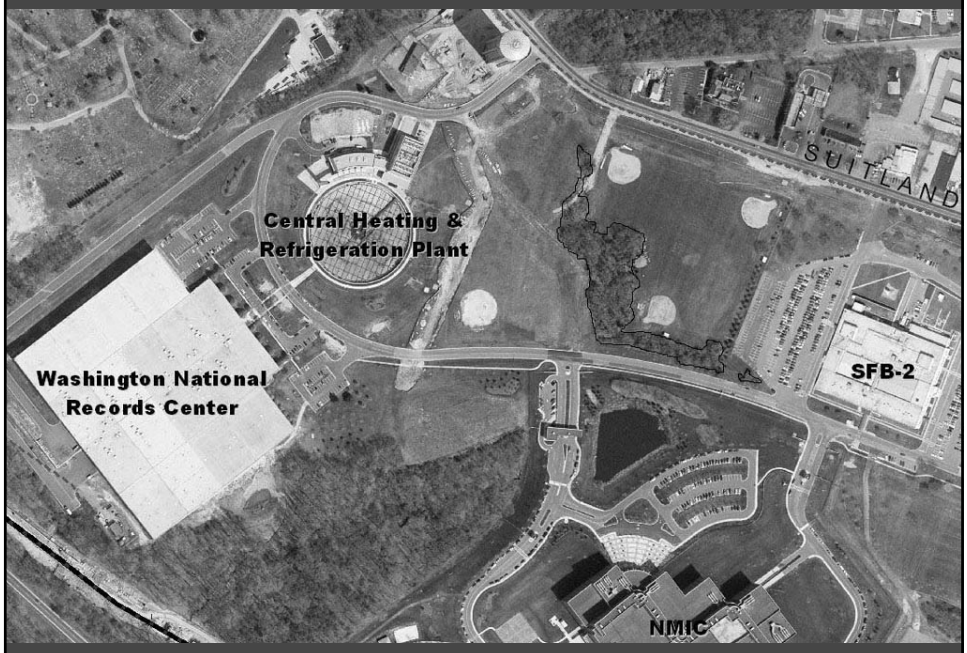

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NOAA SATELLITE OPERATIONS FACILITY
mOrphosis/EYP
NCPC
site plan -view angles noted
08.30.2002
PROPERTY OF THE UNITED STATES GOVERNMENT FOR OFFICIAL USE ONLY

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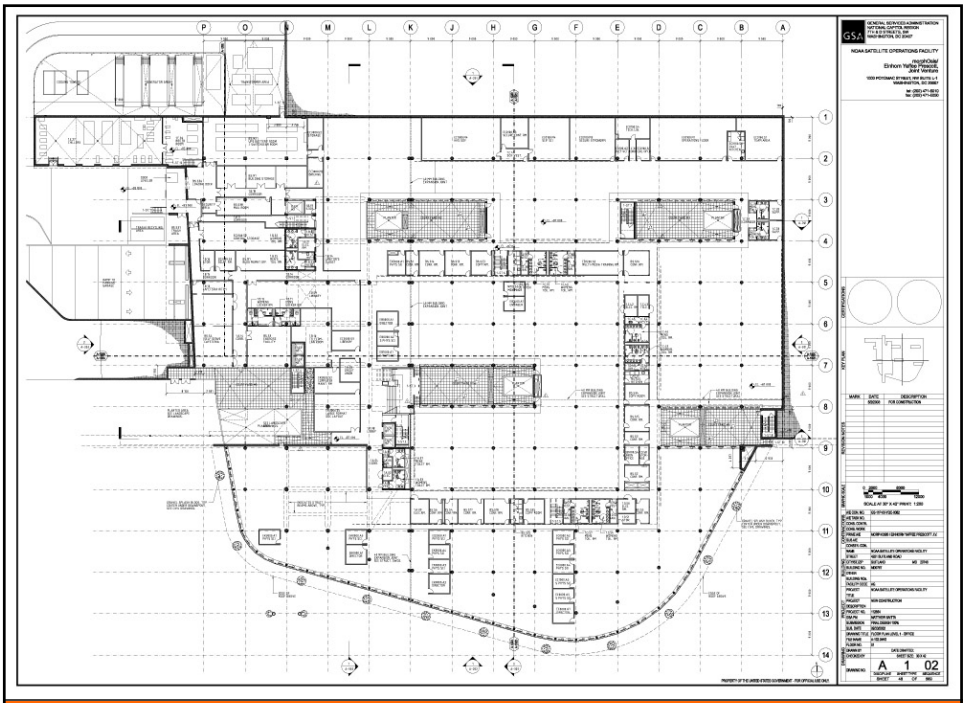
NOAA SATELLITE OPERATIONS FACILITY
A 1 02

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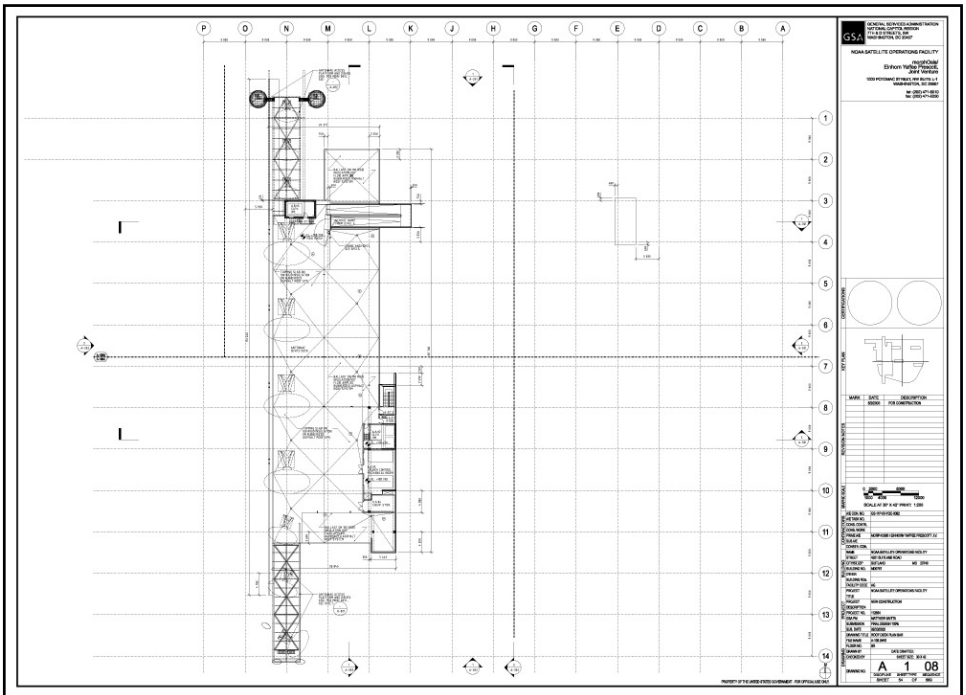


EYP/

NOAA VIEW FROM PARKING

EYP/

NOAA ENTRANCE

EYP/

NOAA SATELLITE LAUNCH CENTER

EYP/

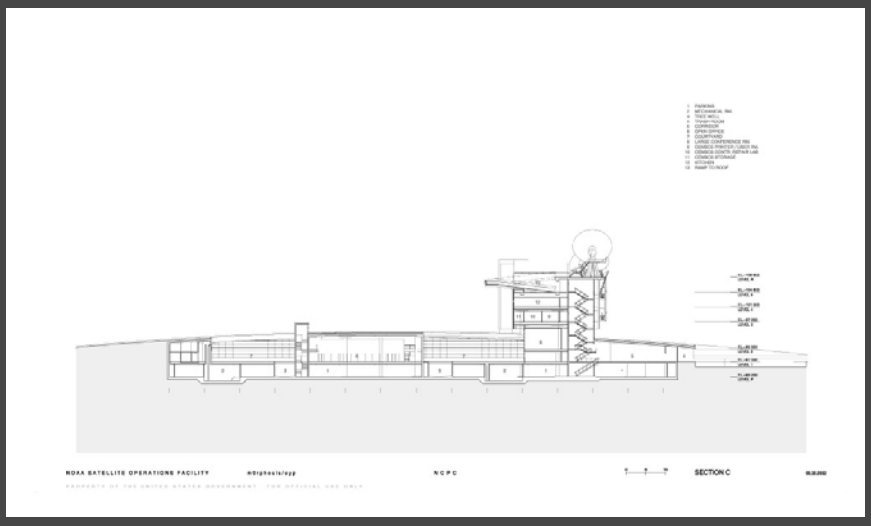
NOAA VISITOR MEZANNINE

EYP/

NOAA VIEW FROM SUITLAND ROAD

EYP/

NOAA CROSS SECTION AT BAR



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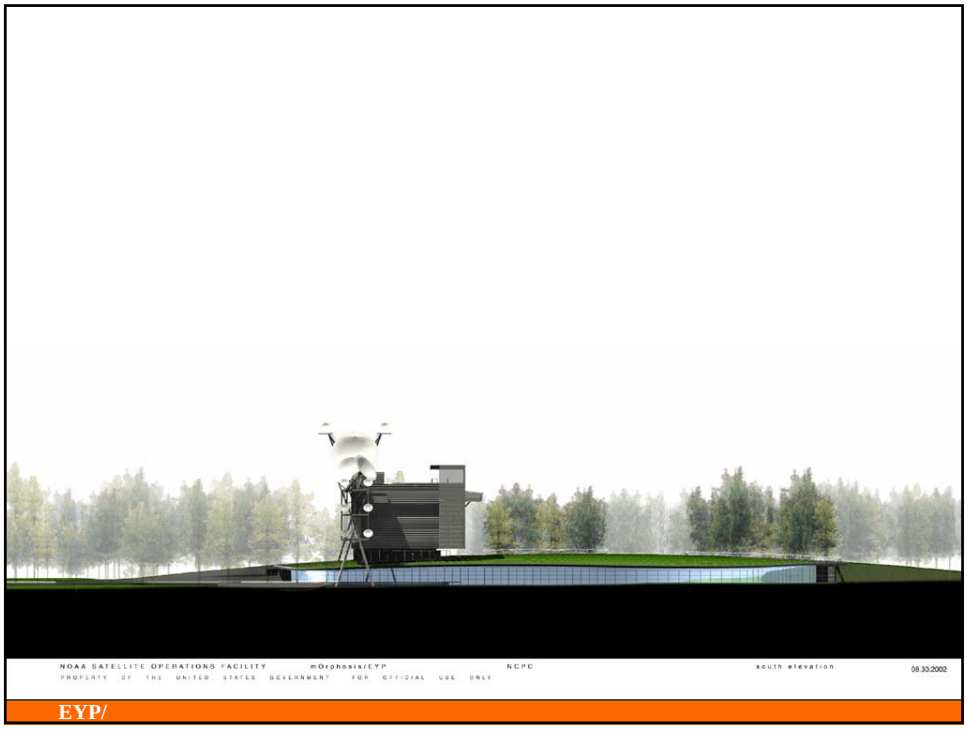
NOAA SATELLITE OPERATIONS FACILITY
mOrphosis/EYP
NCPC
south elevation
08.30.2002
PROPERTY OF THE UNITED STATES GOVERNMENT FOR OFFICIAL USE ONLY

EYP/


NOAA SATELLITE OPERATIONS FACILITY
mOrphosis/EYP
NCPC
west elevation
08.30.2002
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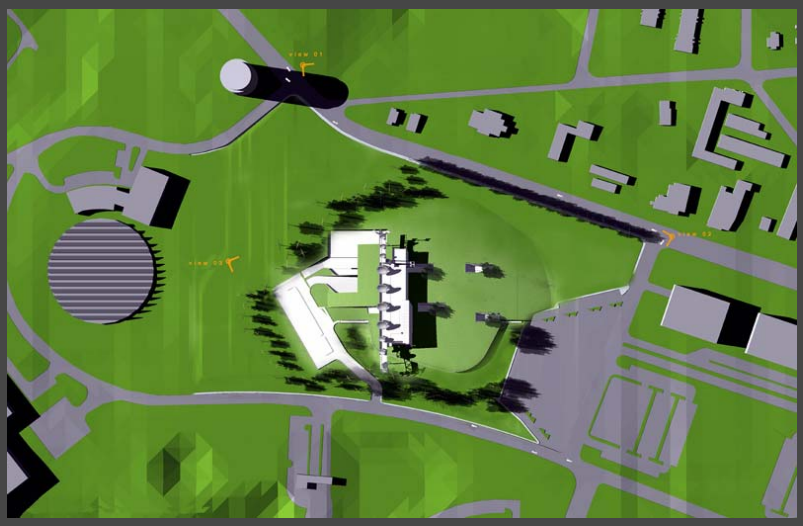
NOAA GETTING TO LEED™ SILVER



EYP/

SUSTAINABLE SITES

- Stormwater runoff conforms to EPA guidelines. SSC6.1
- A protective transition plan protects the initial site disturbance until permanent stabilization and SWM facilities are in place. SSC6.1
- Natural vegetation is preserved to the maximum extent possible. SSC5.1
- Perimeter protection prevents off-site sedimentation and erosion damage. SSP1
- Only 20% of the project site becomes impervious. SSC6.1

EYP/

SUSTAINABLE SITES

- Extremely efficient storm water management strategies employed. Offsite flows are reduced by 7% from existing to proposed conditions. SSC6.1
- Existing site drainage patterns are preserved to the fullest extent possible. SSC6.2
- Safe downstream conveyance is provided for the 1-year, 10-year and 100-year storm events. SSC6.1
- Non-structural Best Management Practices are implemented: Gentle grass channels and swatches and utilization of existing ditch areas for runoff control. SSC6.2

EYP/

WATER EFFICIENCY

- No irrigation system to be installed. Captured rainwater will be dispersed on site or directed to a retention pond. WEC1
- Low flow fixtures help reduce water baseline use. WEC3
- The 146,000 square foot green roof allows water to be controlled on site, aids in evaporative cooling and insulates the building. SSC7.2

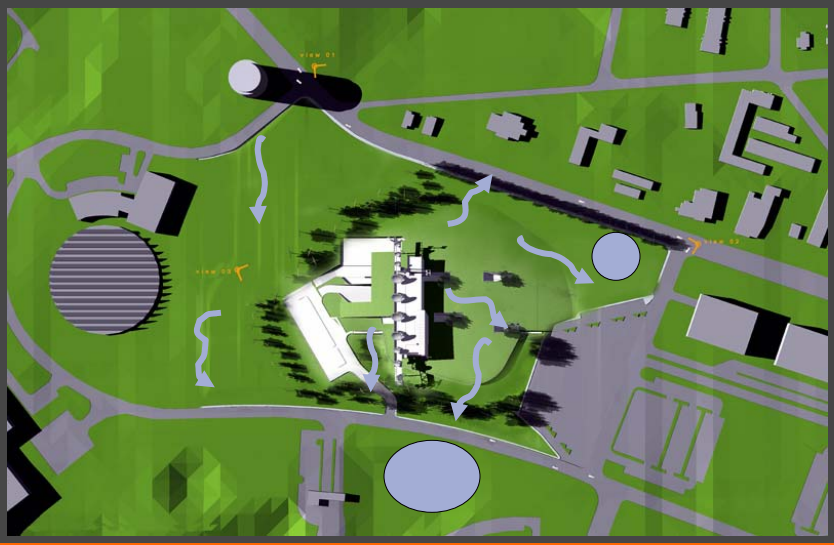
EYP/

ENGINEERING BENEFITS

- No irrigation system to be installed. Captured rainwater will be dispersed on site or directed to a retention pond. WE C1
- Plumbing piping minimized. WE C1
- Thermal value of roof. R-value used in mechanical modeling vs. actual benefits.
- Aids in evaporating cooling, heat reflectance, and acoustics. SS C7.2
- Expands lifespan of roof membrane.

EYP/

NOAA WATER EFFICIENCY



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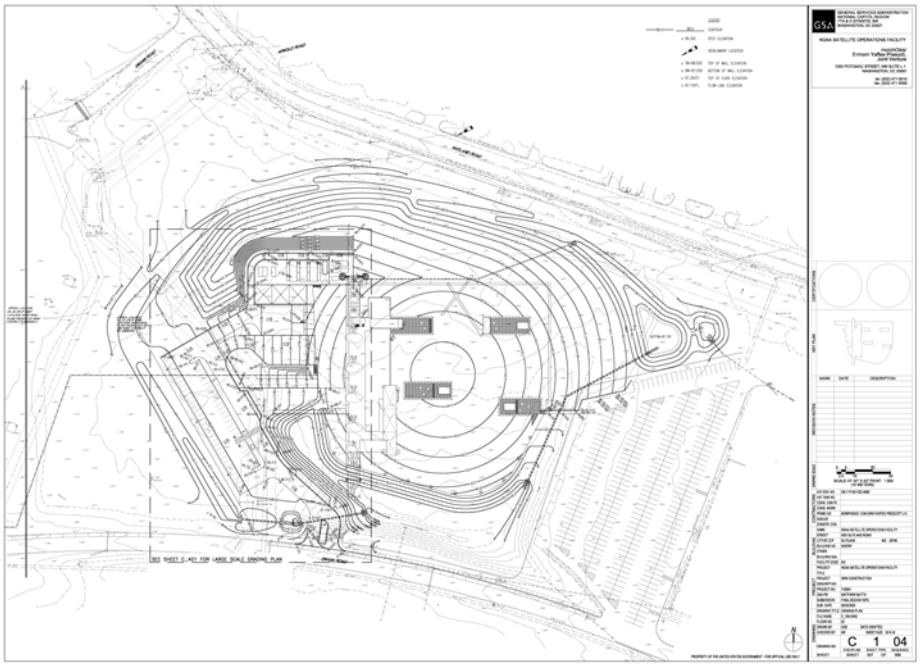


EYP/

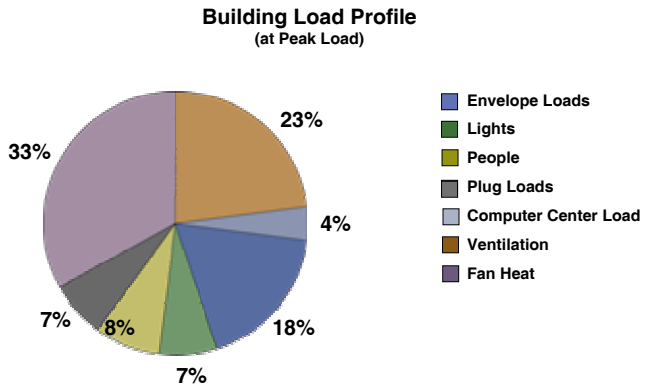
ENGINEERING GOALS

- IAQ, thermal comfort, flexibility. EQ P1 + C7
- Reliability, redundancy and future growth
- Right-sizing systems (use extensive modeling) rather than over-sizing. EA C1
- Continuous monitoring of engineering systems (verification). EA C5

EYP/

LOAD PROFILE ANALYSIS

Load Profile Analysis (Includes Mission Critical Load)



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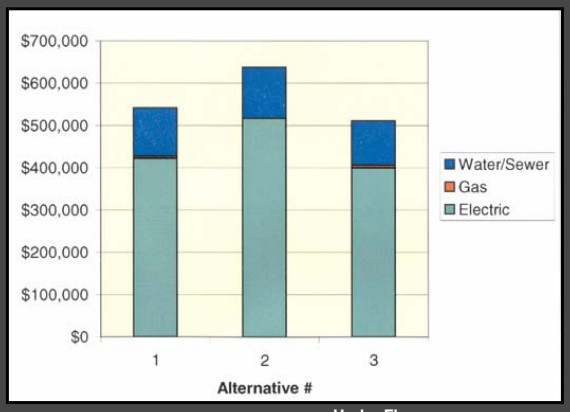
LIFE CYCLE COST ANALYSIS



- System Analysis
  - Life Cycle Cost and System Selection
- Reasons Selected
  - LCCA shows lowest initial cost
  - Open office with high ceilings
  - Individual control
  - Flexibility and churn rate
  - Most energy efficient – helps with LEED™ lowest operating cost

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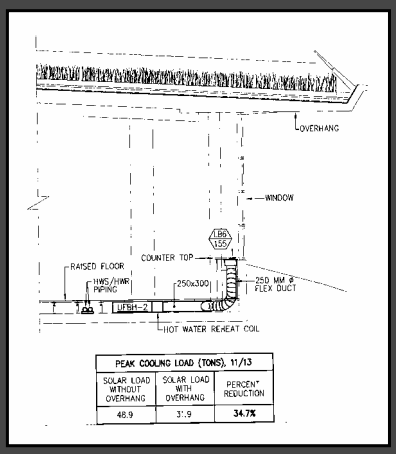
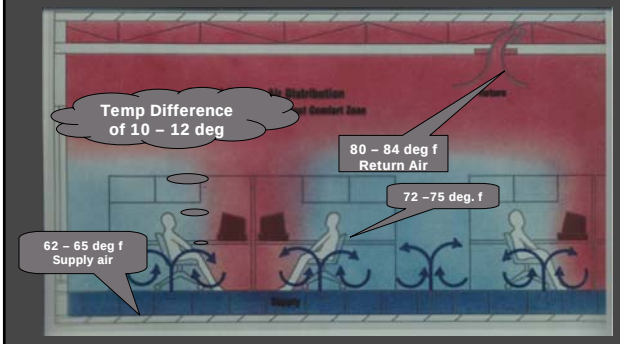
ENERGY & ATMOSPHERE

- Exceeding ASHRAE 90.1-1999
  - Building characteristics
  - Energy efficient equipment at part load conditions



INDOOR AIR QUALITY



- Underfloor air distribution
  - Ventilation effectiveness – 0.9 IEQ C2
- Comply with ASHRAE 55-1992 IEQ C3
- Meet/exceed ASHRAE 62-1999 IEQ C1
- Specification items
  - Protection plan for construction IEQ C3
  - VOC's limitations in paints, coverings, adhesives IEQ C4
- Thermal dispersion HVAC System

MATERIALS AND RESOURCES

- Waste management Plan written into the specifications. MR C2
- Design an area in the building for recycle collection. MR P1
- Specify materials that contain post-industrial or post-consumer recycled content. MR C4
- 20% of our building materials will come from within a 500 mile radius. MR C5
- Wood materials will be certified in accordance with forest Stewardship council. MR C7
- Slag content with concrete. MR C4

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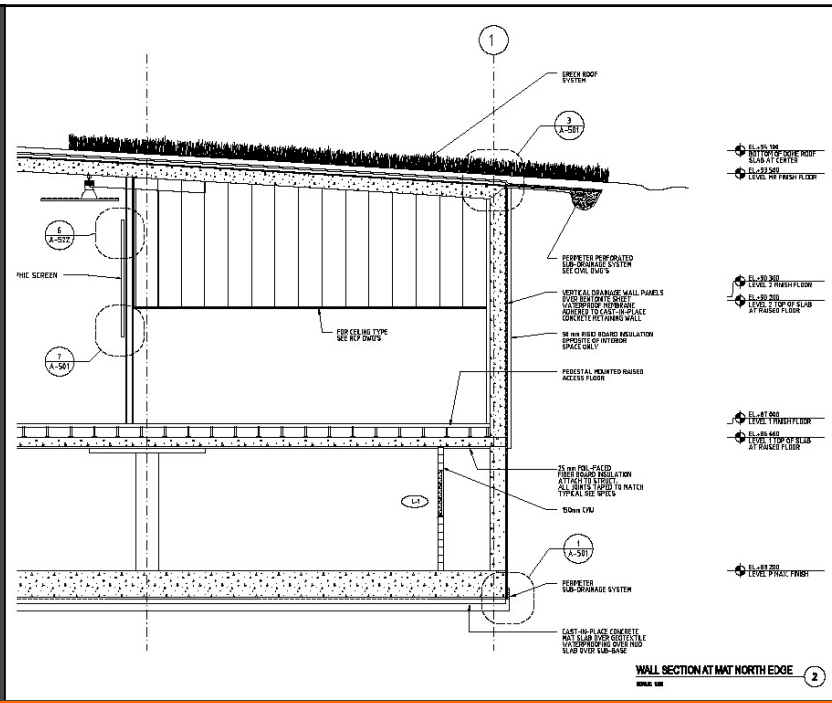

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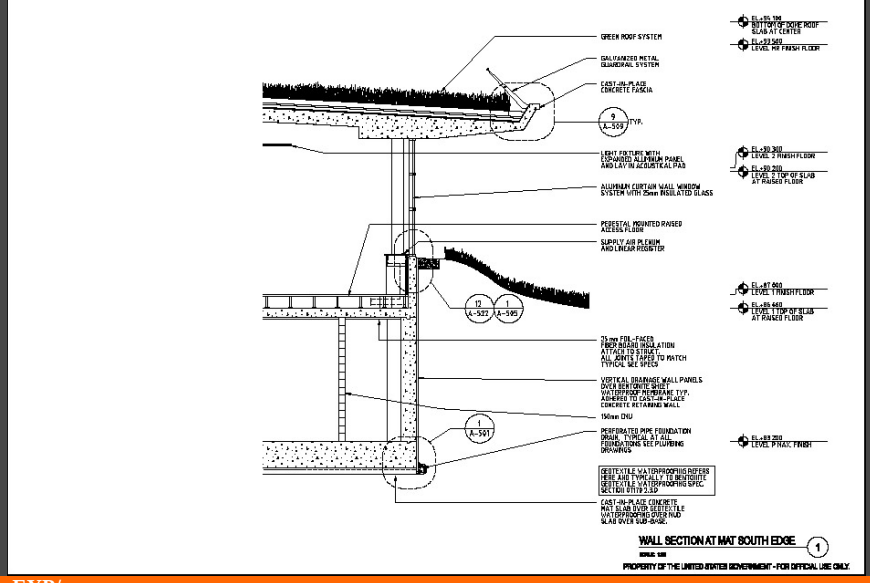

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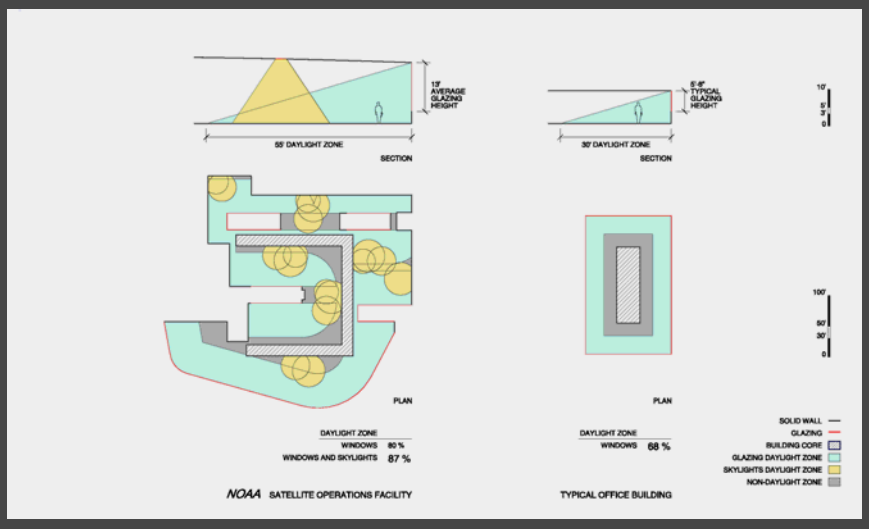
DAYLIGHTING



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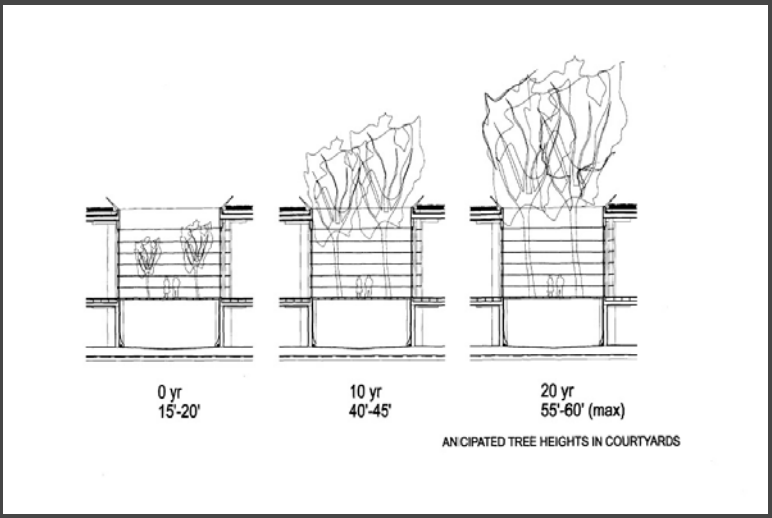
NOAA DETAIL AT COURTYARDS



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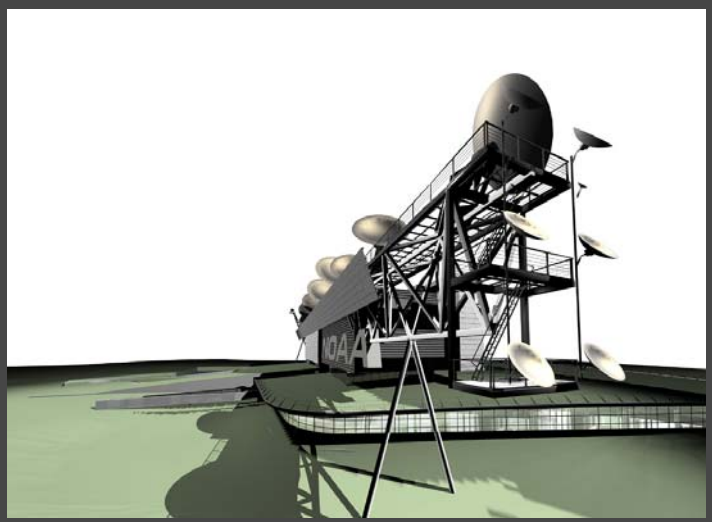
NOAA SOUTH VIEW



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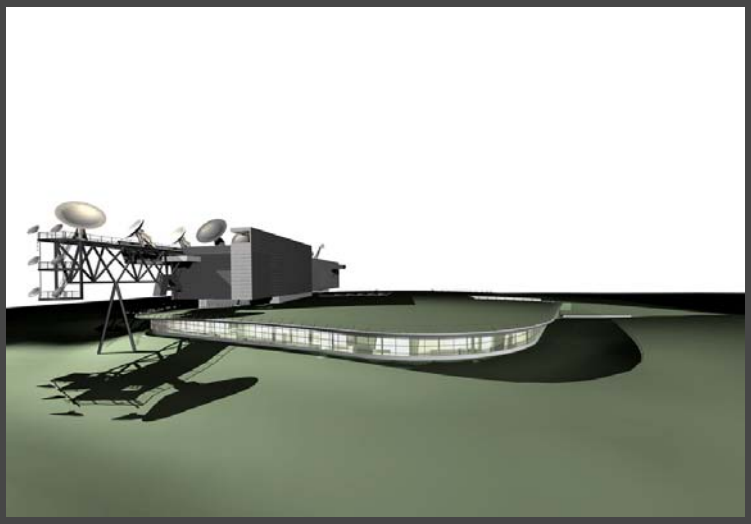
NOAA SOUTH EAST VIEW



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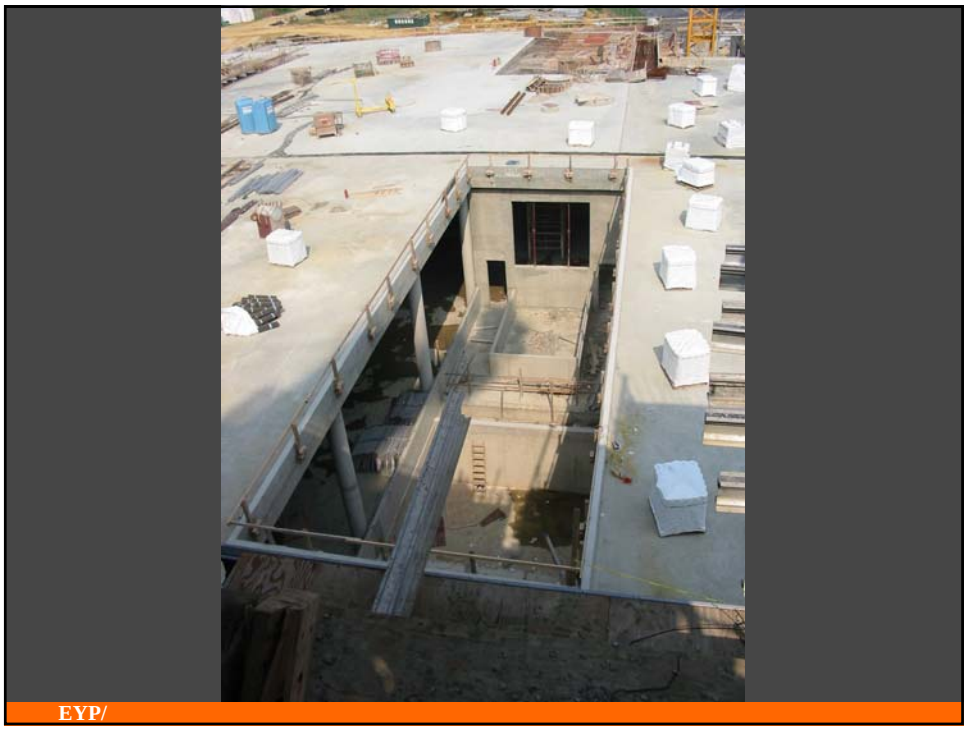

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AWARDS & RECOGNITION

- 2002 GSA – National Design Award “On the Boards”
- Los Angeles Chapter AIA Merit Award 2003
- PA Award – January Issue 2004
- Presented at Bienalle, Venice, Italy 2002
- Global Architecture Project of the year 2003

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NOAA

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